

Cherokee -BP



"Rite in the Rain"®

ALL-WEATHER

**ENVIRONMENTAL**

No. 550

1340 Tsa G. Blvd.

Proj# 15.203



ALL-WEATHER ENVIRONMENTAL FIELD BOOK

Name Alpha Environmental

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Asheville, NC 28801

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Project Cherokee BP - Mini Plant  
1340 Tsalali Blvd.  
Cherokee, NC

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Logbook Signature  
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Chris Dunlop (CHD)

Cherokee Mini-dam

Weather - Clear, Sunny

High 75° F

0915 - CHD onsite, inspect  
utility markings, introduce  
myself to Stone Clark.

0925 - Calibrate PID (MiniRae 2000  
SN: 110-013683) with 100ppm  
180 butylene;  
fresh air = 0.0ppm

Span cal = 100 - 101 ppm.  
0950 - Geologic Drilling onsite,  
discuss work approach,  
site layout, & utility  
markings. Will be hand  
clearing to 5' BGS if  
possible.

1020 - Setting up Machinery at  
NW-2. CHD discusses  
Site Health & Safety  
(Level D PPE), using cones  
to control traffic.

Chris Dunlop 9/23/15

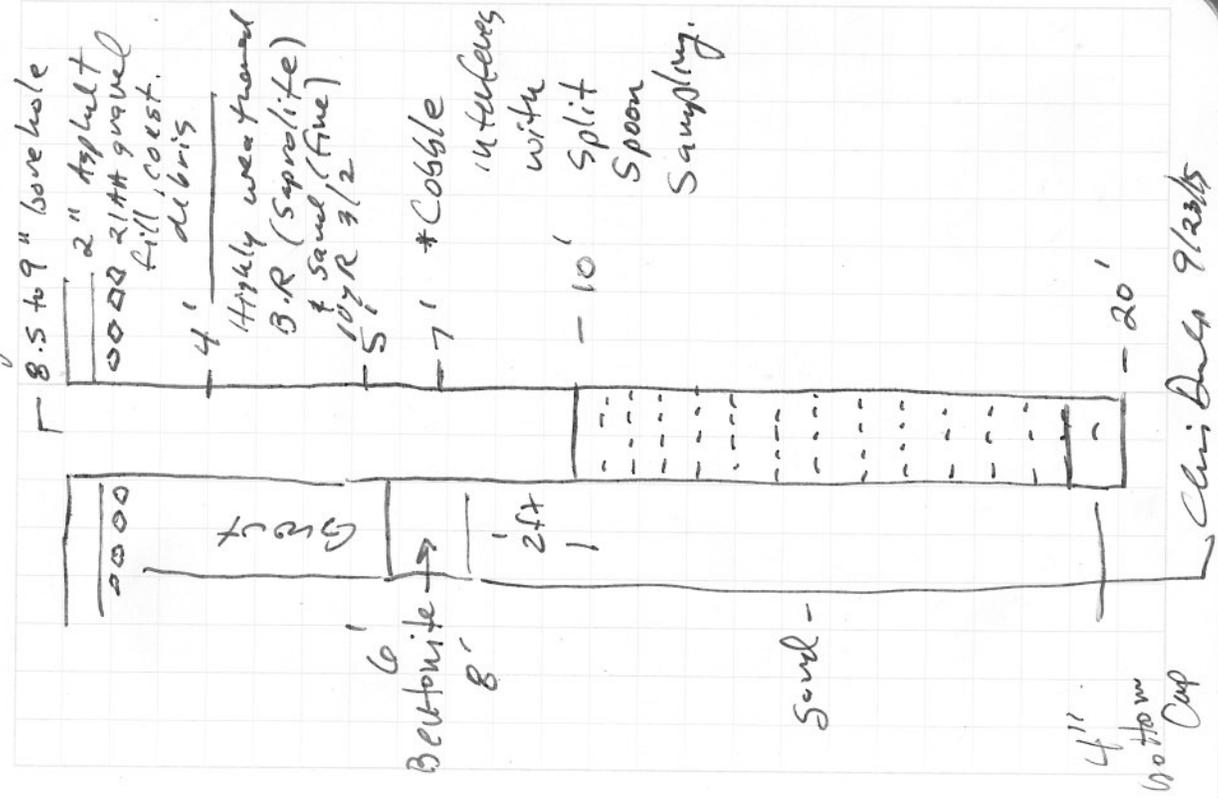
6 Location 1340 Tsali Blvd Date 9/23/15

Project / Client Ferguson Cherokee BP - Mini Mart

- 1055 - "Bubba" hand digging @ MW2
- 1110 - finish hand digging to 5' BGS.
- 1115 - Collect Sample MW2-01 (4.5-5' BGS) collected w/ Hand Auger bucket. 0.0ppm PID Very dk. grayish brown. Sample suite: VOCs, EPH/UPH, SVOCs.
- 1125 - Geologic advanced augers 6' 6-8' 7, 13, 27, 13 Blows, sample Split spoon 6-8' 1ft recovery - Silty Sand, 107R 4/3 brown, dry (0.0ppm)
- 8-10' 8/27, 50/5, 1ft recovery Silty Sand, very large gravel 2" diameter. Dry 0.0ppm presence of very large gravel inhibits soil volume to complete sample suite. Chris Data 9/23/15

7 Location 1340 Tsali Blvd Date 9/23/15

Project / Client Ferguson - Cherokee BP MW2 Well Diagram



Chris Data 9/23/15

Location 1340 Tsali Blvd

Date 9/23/15

Project / Client Ferguson  
Cherokee BP-Mini Mart1195 - Collect Sample MW2-02  
(9.5-10').

10.12' rope sample 3 a 4 ft apart  
50 blows / 5" river cobble  
no sample. Geologic  
Runs Augers to 15'

1149 - Augers Advanced to ~15' BGS.  
Note Fuel odor!  
PTD = 31.7ppm. (taken  
from soil cuttings from  
~13' BGS)

1155 - Soil Cuttings indicate  
sand, 1 try for sample.

17-17.5' 9" Recovery 50 blows  
over 5".  
PTD = 155ppm Silty Sand  
164R 3/4 dark yellowish  
brown. dry.

Chris Daulton 9/23/15

Location 1340 Tsali Blvd

Date 9/23/15

Project / Client Ferguson  
Cherokee BP-Mini Mart

Collect Sample MW2-03

17-17.5' ~~Grouted Sample~~  
to follow sample site. CMO 9/23/15

Bubba suggests that  
this sample is not represent-  
ative of the auger flight  
depth. He suggests it  
is disturbed sample -  
materials stuck in auger  
from rubble restriction.

Soil Cuttings wet - Auger  
flight to 20' BGS. Plan to  
set Green 10-20'.  
Bubba thought we may  
have encountered water  
table ~13' BGS.

1145 - Geologic takes lunch  
1110 - CMO Checks water level  
~13.5' BGS. strong fuel  
odor on end of probe.

Chris Daulton 9/23/15

10 Location 1340 Tsalali Blvd Date 9/23/15

Project / Client Ferguson

Cherokee BP - minimum

1370 - Geologic moving equip. to next monitoring well location. Also cleaning equipment and cleaning up soil cuttings from MW2.

1430 - Finish decon, however, a Coca-Cola truck is blocking area.

1508 - Coca-Cola gone, setting up at MW3.

1520 - Hand digging MW3 - hand Auger (4 1/2") + post hole digger. 2 to 3" Asphalt

gravel / fill  
const. debris

↓ PFD = 0.0ppm

2 1/2' refusal w/ hand Auger

Advance Auger - slowly insert split spoon (4-6')

Chris - Dunlap 9/23/15

11 Location 1340 Tsalali Blvd Date 9/23/15

Project / Client Ferguson

Cherokee BP - minimum

4-6' 3, 3, 3, 2 - 16" recovery same as before, brown, dry, silty sand - some small gravel. PFD = 0.0ppm

1550 - Collect sample

MW3-01: UOC, Suoc, PH/UPH 5' BGS

low 3" is loamy - some cohesivity

Advance Augers to 9' BGS (continuous sampling not possible due to cobble) split spoon 9-11'

9-11' 13, 50/5" - 8" recovery

(4" ~~4~~ crushed rock) - See

Photo MW 9/23/15 Most is crushed rock - Sample not useable. PFD = 0.0ppm

try 11-13'

11-13' 50/5" - All Rock (crushed)

Advancing augers - cuttings crushed rock + sand + gravel

Photo  
Chris - Dunlap 9/23/15

Location 1340 Tsalali Blvd

Date 9/23/15

Project / Client Ferguson  
Cherokee BP-Minimant

Strong odor in soil  
 PID = 48.9 ppm.  
 Soil dry. Bubba approximates  
 this soils depth ~ 12' BGS.

Tooling "bouncing" as  
 advancing indicating  
 contact with metal rubble

Based on the response of  
 the equipment (bouncing)  
 and crushed/broken rock  
 in cuttings & Split spoon  
 samples. It appears  
 that the subsurface consists  
 of Cobble +/- Sand layers  
 from ~ 7 ft BGS to  
 bottom of borehole ~ 20' BGS

11020 - Collect Sample MW3-02  
 from ~ 10' 1/2 - 11 ft BGS  
 \* limited Sample Volume.  
 Collect in 4oz jar until

Chris Dunlop 9/23/15

Location 1340 Tsalali Blvd

Date 9/23/15

Project / Client Ferguson  
Cherokee BP-Minimant

Coordinate w/ Lab Alpha  
 on best use of sample  
 aliquot.

1627 - Augers refused at  
 16' BGS. Geologic setup cur-  
 tooling - advance to 20' BGS  
 and set well.

1715 - Geologic cleaning up  
 area around MW3.

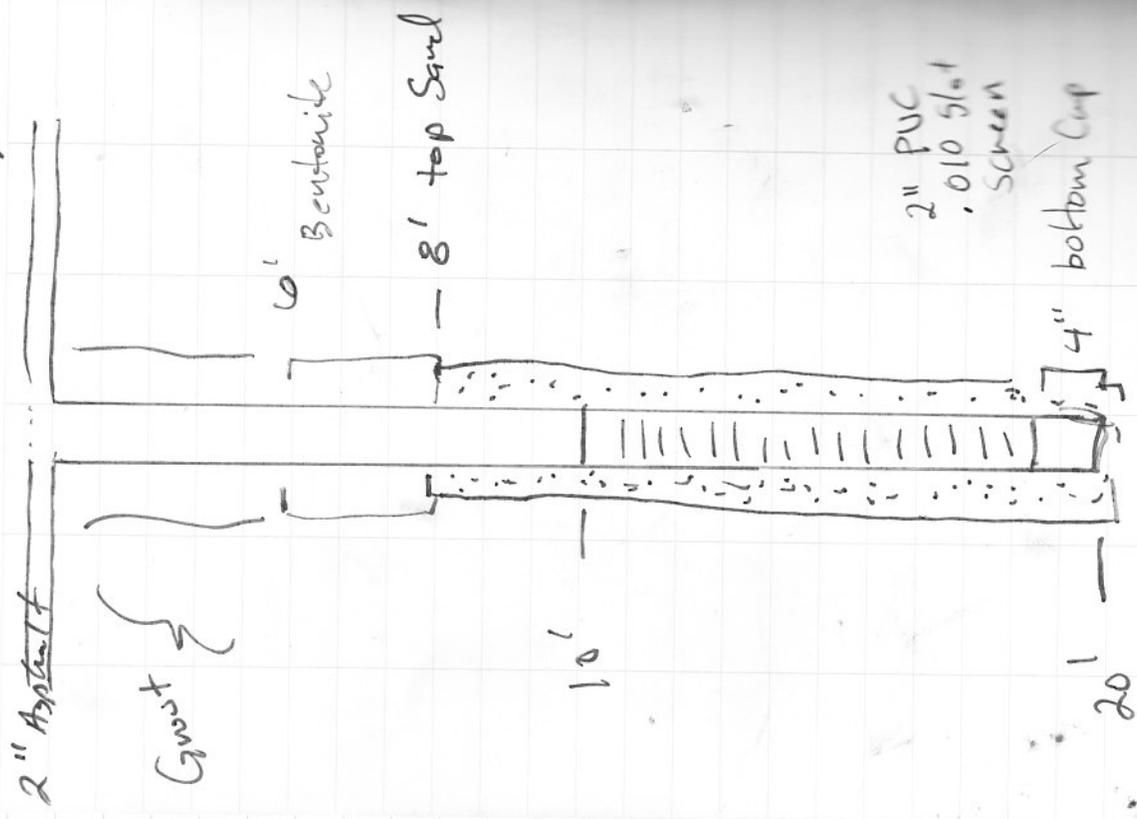
- MW2/MW3 have sand  
 set - will finish  
 hole plug on all wells  
 tomorrow. Boreholes have  
 full 55 gal drums over  
 top w/ caution tape.

1730 - Geologic finishing up for  
 day (decon) - C40 offsite  
 down road to well  
 Sara Burkhalter,

Chris Dunlop 9/23/15

Location 1340 Tseli Blvd Date 9/23/15

Project / Client Ferguson - Chemok. BP - Mart  
MWS - Construction Diagram



Chris Dwyer 9/23/15

Location 1340 Tseli Blvd. Date 9/24/15

Project / Client Ferguson - Cherokee BP  
Apmi Mart

0740 - OAD onsite, Geologic setting up at MWL. Ca lib make PID; fresh air = 0.0ppm  
Isobutyrene = 100 - 101ppm.

MW! 4-6' split spoon  
5, 9, 5, 5 - 1.5' Recovery

4-5' - Similar 10yr brown #13 fill with gravel.

5-6' - f to M sand, 10yr 3/1 very dark gray, Dry, Odor PID = 0.0ppm

0808 - Collected Sample MWL-01 (5-6') - fill suite.

0810 - Augers @ 7' BGs, want get past obstruction - Cobble / B.R.? Burring teeth off cutting head - Switch to air sonic tooling.

Health/Safety Note: Geologic does not consistently use

Chris Dwyer 9/24/15

16 Location 1340 Tsali Blvd. Date 9/24/15

Project / Client Ferguson  
Cherokee BP-Mini Mint

appropriate PPE.  
0900- Advanced to 20' BGS,  
however there was some  
collapse of borehole  
during screen placement;  
total depth will be <20'.

Soil Clogging observation:  
Sand + crushed rock (due  
to air testing) + gravel.

No odor; PID readings  
< 2.0ppm.

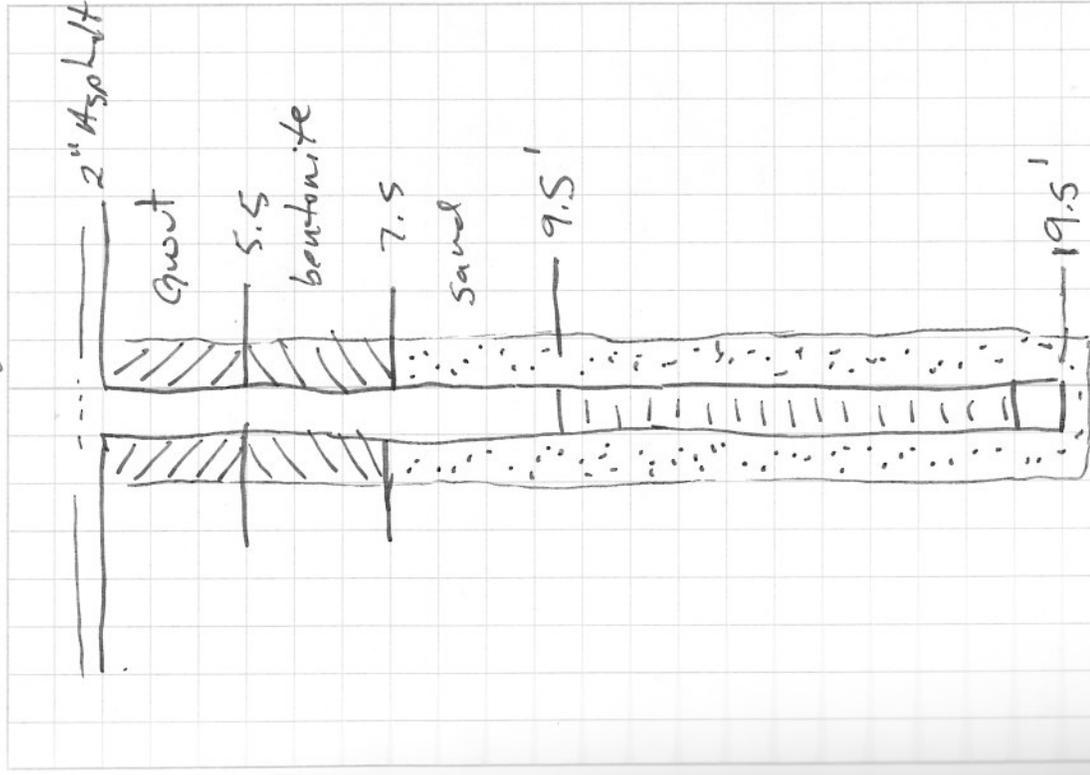
Bubba indicates cobble  
from 7-20' BGS

1662- Geologic finishes down,  
setting up rig for 2  
soil boring locations.

~~Chris Andy 9/24/15~~

17 Location 1340 Tsali Blvd. Date 9/24/15

Project / Client Ferguson - Chalk. BP-Mint  
MW1 - well diagram



Chris Andy 9/24/15

Location 1340 Tsali Blvd. Date 9/24/15

Project / Client Ferguson

Cherokee BP - Mini Mart

SB1-01 Set at South edge  
of presumed tank excavat-  
ion (edge of new concrete)  
2" Asphalt at top.  
- Below brown  $\rightarrow$  2.1AA gravel  
then brown fill / const. debris  
 $\sim$  3' BGS encounter 12"  
drain pipe. Move Rtg forward  
Split diff between ~~cuts~~  
location  $\&$  ~~mtt.~~ Backward  
toward Pink Motel.

4-6' 4,4,4,4 photo 1.5' Recovery  
2.5g 4/2 dark grayish brown.  
fine sand - some gravel (4cm)  
Dry. PFD = 0.0ppm

1105 - Sample SB1-01 (5-6')

Full suite.

SB1-02?

6-8' 7,29,24,21 - 1 1/2 Recovery

6-7' SAA

SAA - Same As Above

1340 Tsali Blvd.

Project / Client

Ferguson

Date

9/24/15

Cherokee BP - Mini Mart

7-8' SAA, bot has more  
medium  $\&$  coarse grained  
sand, more gravel (2-3cm)  
Dry, PFD = 0.0ppm.

8-10 30,50/s" 1.25' Recovery -  
upper 3" most likely silt,  $\&$   
predominantly cobble (crossed  
in split spoon). Dry, PFD = 0.0ppm

Geologic cannot advance Ager  
further in order to attempt  
another Split Spoon Sample.  
backfill borehole.

100 CHD retains samples to  
prioritize Sample decision  
later (SB1-02?)

CHD get's photo of the  
Cobble trapped in bottom  
of cutting head when  
geologic removes bottom  
arger flight - trapped  
Cherokee Dup 9/24/15

Location 1340 Tsalali Blvd. 9/24/15

Date

Project / Client

Ferguson

Cherokee, BP - Mini Mant

n2' up inside hollow stem.

1200 - Geologic Hand digging @ SB2 location.

refusal ~ 2' BGS, large rock.

1210 - 1240 Lunch BRK.

CHD makes visual observ. of BR exposures west side Tsalali Blvd (from site - across street) and BR exposure along Ocala/Luffer R. where southern extent of fuel spill located.

BR Geology:

Rock Type - Gneiss - bedding (foliation) is near vertical and rock highly jointed/fractured.

1220

prepare Split Spoon

4-6' 8, 8, 6, 1' - 2' Recovery

Chin. Judo 9/24/15

Location 1340 Tsalali Blvd 9/24/15

Date

Project / Client

Ferguson

Cherokee BP - Mini Mant

Similar brown fill (Sand + gravel + const. debris) Dry PFD = 0.0 ppm.

1230 - Collect Sample 5-6' full suite. SB2-01

6-8' 15, 30, 39, 21 - 2' Recovery

6-7 - SAA

7-8 - Crushed cobble

Retain 6-7' foot for sample determination later. PFD = 0.0 ppm

1210' 20, 25, 50, 1/3" - 1' Recovery  
Crushed cobble PFD = 0.0 ppm  
Mega buck filling boulders.

1400 - Move equip. to MW4 location, hand dig.

Chin. Judo 9/24/15

Location 1340 Tsali Blvd. Date 9/24/15

Project / Client Ferguson  
Cherokee, BP Mini Mart

MW4 - 2" Asphalt, underlain  
by ~~brown~~ gravel (21AA)  
and brown fill - mostly  
sand w/ some construction  
debris (Asphalt, conc, brick).  
DRY, PTO = 0.0ppm.

4-6 1, 2, 3, 1 - 1.5' Recovery  
104R 4/4 dark yellowish brown.  
Fill - Silty/Sand w/ gravel.  
DRY - 0.0ppm

1415 - Collect Sample MW4-01  
(5-6') - full suite.

Geologic tries to advance  
augers for 9-11' split  
spoon, however, teeth  
ground down (cutting  
head) on cobble. Will  
have to finish well  
w/ Air tooling.

Chris Dubois 9/24/15

Location 1340 Tsali Blvd. Date 9/24/15

Project / Client Ferguson  
Cherokee, BP Mini Mart

1510 - Geologic repeatedly  
had to clear borehole  
due to cave in at ~17' BGS.  
Geologic also tried over-  
drilling to ~22' BGS.  
=> Screen set at bottom ~17' BGS.

CHD Monitored Soil Cuttings  
=> Sand + crushed  
cobble & gravel.

No PTO readings > 0.0ppm  
nor any odor reported.

Geologic working on patching  
PB-holes & MW-pads:

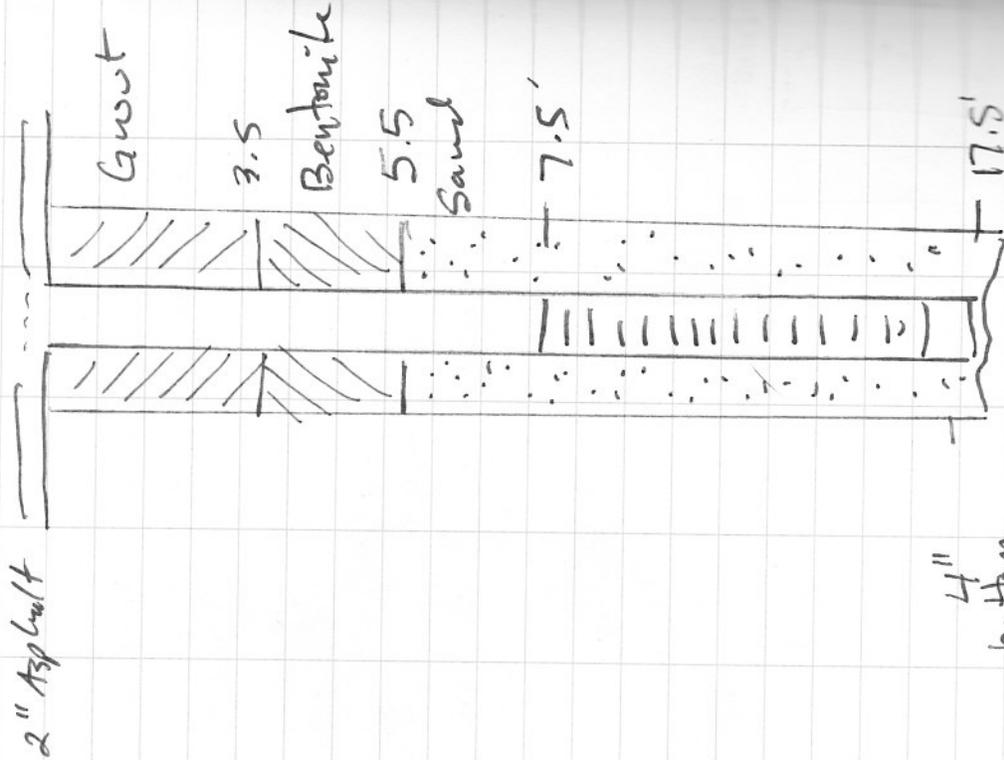


pad 3" thick

Chris Dubois 9/24/15

Location: 13410 Tsali Blvd. Date: 9/24/15

Project / Client: Ferguson - Cherokee. BP Mni Mnt  
NW4 - Construction Diagram



Chris Julep 9/24/15

Location: 13410 Tsali Blvd. Date: 9/24/15

Project / Client: Ferguson - Cherokee  
BP Mni Mnt

1700 - 8 drums moved to  
sidewalk area on  
South side of Pmk Motel  
(with all drums associated  
w/ fuel recovery @ river).

Geologic finishing pad  
construction (pouring concrete).  
They will remove cones  
tomorrow morning.  
CFO has keys for all locks.

1710 - CFO offsite

~~Chris Julep 9/24/15~~

Location 1340 Tsali Blvd Date 9/30/15

Project / Client Ferguson BP-Chowhee  
Well Development

09:20 - CTO onsite, weather-  
overcast 68°F, note ~3"  
rain over last 5 days  
(starting last Friday Eve.)

0945 - Jason Webb onsite - CTO  
discusses well install, and  
site history.

10:30 - CTO prepares to develop  
MW-2, Depth FP ~ 12.15' STOC  
see well development  
forms. Interface probe didn't  
indicate He/Oil interface.

- Couldn't get accurate  
water level. Boiler indicates  
~ 10" - 12" FP in well. (photo)

Well Not Developed.

11:35 - Have purged ~ 12 gal  
from MW-3, DRY, very  
dark - cloudy. Let well  
recharge and ASSESS water  
color.

11:55 - Water level came back up  
to 14.15' STOC, Start  
Chris Andy 9/30/15

Location 1340 Tsali Blvd. Date 9/30/15

Project / Client Ferguson, BP-Chowhee  
Well Development

Collecting GW-parameter - Data.  
(See Develop-form).

12:15 - MW-3 continues to go dry,  
then with high sediment  
load in bottom of well.  
CTO will work on MW-1 &  
3 simultaneously - see logs.

13:35 - Getting MW-1 recharge,  
get started on MW-4.

14:50 - Finish well development -  
Put labels on drums. Also  
trough Asphalt/plastic  
piled out of drum to  
make room for well water.  
15:20 - CTO offsite - back to  
ALPHA.

Chris Andy 9/30/15

Location 1340 Tsalali Blvd Date 10/7/15  
 Project / Client Ferguson, BA - Mni Mni  
 MW Sampling (Chevole)

weather - Clear, high near 70°F  
 0815 - CTO @ ALPHA  
 1045 - CTO @ 1340 Tsalali Blvd.  
 Hcd to p/v supplies @  
 Home Depot and p/v 55 gal  
 drum @ MTN. ENVIRO.

Tasks: well sampling, piece  
 drum, contact EBCI &  
 Client Rep. FP Recovery from  
 MW-2.

Analysis: EPA 602, 625,  
 MADEP VPH / ENA

602 (Volatiles) 3-40 ml w/Hcl  
 EPA 1L Amber w/Hcl  
 625 (SVOA) 1L Amber w/vapour.  
 VPH 3-40 ml w/Hcl

Calibrate PID - response 10 ppm  
 for 100 ppm Tschyba gas.

Oliver 10/7/15

Location 1340 Tsalali Blvd Date 10/7/15  
 Project / Client Ferguson, BP Mni Mni  
 MW Sampling (Chevole)

MW-4 - PID = 0.0 ppm  
 see MW - purge Data Sheet  
 1251 - Setting up @ MW-1  
 PID = 0.2 ppm

1405 - Setting up @ MW-3  
 PID = 53.7 ppm

1500 - Setting up @ MW-2  
 PID = 169 ppm  
 CTO checks for Free product  
 using boiler ~ 12" FP.

Depth to FP = 11.99' BTOC  
 Depth to Water = 2.44' BTOC  
 1645 - Removed ~ 1/2 gallon FP - dried  
 → stored in 5 gal. yellow  
 Fuel - Can. CTO waits for  
 recharge.

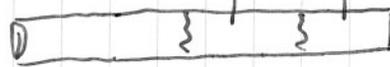
1674 - Depth FP = 11.57  
 PTW = 11.81 > ATBRC  
 Oliver 10/7/15

Location 1346 Tsalali Blvd Date 10/7/15  
Project / Client Ferguson, BP Mini Mart  
MW - Sampling (Cherokee)

1550 - 040 offsite  
1745 - 040 back in Asheville, NC  
Consolidate samples/equipment  
for the evening.

~~Cris Julep 10/7/15~~

W  
W



free product

water +  
whitish coagulate

Location 1340 Tsalali Blvd Date 10/8/15  
Project / Client Ferguson, BP Mini Mart  
MW - Sampling (Cherokee)

Sample Record

Well	Date/Time Sample
MW-4	10/7/15 - 1205
MW-1	10/7/15 - 1330
MW-3	10/7/15 - 1440

~~Cris Julep~~

10/8/15

Location 1340 Tsalali Blvd. Date 10/22/15

Project / Client Ferguson, BP - Mini Mart  
FP-Recovery / Survey (Charlotte, NC)

Weather - 58°F in a.m. High forecasted ~73°F, Sunny cool - both onsite, Meet with Robbin / Mr. Ferguson - talk about progress w/ reimbursement/preapproved, L&A Report.

1040 - Free product Recovery MW-2.

Initial DTP = 12.24' spec DTW = 13.05' ± BTOC.

Removed ~ 1/2 gallon FP. visibly, level went down considerably.

Final DTP = 12.30' DTW = 12.51' BTOC

1200 - CTO measures elevations of MW's, men inspect fuel recovery channel/bottom along river

Chris Daulto 10/22/15

Location 1340 Tsalali Blvd. Date 10/22/15

Project / Client Ferguson, BP - Mini-Mart  
FP-Recovery / Survey (Charlotte)

Main Recovery trench does not appear to have any free product. Booms do not contain product. The trench does have large amounts of Iron Bacteria - bottom of trench covered in orange (looks like algae).

Cobbles at water line are stained, light petroleum odor surrounds area. many schools of minnows observed living in trench.

outcrops B.R. (terminus of recovery trench) - no fuel, oxidized Iron entering main river channel here.

1100 - CTO goes to Jack Johnson's office to get maps/chart relevant to information

Chris Daulto 10/22/15

Location: 1340 Tsalali Blvd  
 Date: 10/22/15  
 Project / Client: Ferguson, BP - Mini-NGLT  
 FP-Recovery / Survey (Cherokee)

needed to complete the LSA  
 report.

1445 - CMA back to Asheville.  
 1600 - Arrive, mileage: 108 miles.

Survey Data:

Base Elevation: MW-3 → 1,952'  
 Optical Height = 4.66'

MW3 - (BGS = 0.35')

MW2 - 4.58' from optic

MW1 - 4.66'

MW4 - 3.88' ↓

*Chris July 10/22/15*

Location \_\_\_\_\_ Date \_\_\_\_\_  
 Project / Client \_\_\_\_\_